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Art Unit: 2142  
Examiner: Ailes  
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### REMARKS/ARGUMENTS

Claims 1, 3-7, 9-15, and 17-23 were pending and examined. The Examiner objected to minor informalities in claim 23. The Examiner rejected claim 3 under 35 USC § 112, second paragraph, as being indefinite. The Examiner rejected claims 1, 3-7, 9-15, 17-19, and 21-23 under 35 USC § 102(e) as being anticipated by Chawla *et al.* (U.S. Patent No. 6,876,668), hereinafter "Chawla". Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Chawla in view of Choi *et al.* (U.S. Patent No. 6,661,803), hereinafter "Choi". In this response, Applicant has amended claims 1, 7, 15, 21, and 23 and canceled claims 3, 9, and 19.

Applicant wishes to thank the Examiner for committing to take the time to discuss the application and this amendment with Applicant's undersigned representative.

#### Claim Objections

The Office Action indicated an objection to a minor informality (missing period at end of claim) in claim 23 as filed. In response, Applicant has amended claim 23 to include a period. Applicant wishes to thank the Examiner for discovering this error. Applicant submits that the claim as amended addresses the objection raised by the Examiner and Applicant would respectfully request the Examiner to reconsider and withdraw the objection.

#### Claim rejections under 35 USC § 112

The Examiner rejected claim 3 under Section 112, second paragraph, as being indefinite. Applicant's cancellation of claim 3 renders this rejection moot.

#### Claim rejections under 35 USC § 102(e)

The Examiner rejected claims 1, 3-7, 9-15, 17-19, and 21-23 under Section 102(e) as being anticipated by Chawla. In response to the rejection of independent claim 1, Applicant has amended the claim to recite that the method includes automatically and periodically repeating the determination of a link's effective data rate and a subsequent re-negotiation of the link's operating frequency so that the operating frequency is periodically and automatically set to the lowest operating frequency that is compatible with the effective data rate. Support for this amendment

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is found in the specification as filed in FIG. 4 and the corresponding textual description (see., e.g., page 7, line 11 through page 8, line 8).

The limitations of the independent claims are not anticipated by the cited reference. A Section 102 rejection is appropriate only when the cited reference discloses either explicitly or inherently all of the claim limitations. In this case, Chawla does not anticipate the limitations of the amended claim because Chawla does not disclose either explicitly or inherently a method of periodically monitoring the effective data rate of a communication link to ensure that the operating frequency of the link is maintained at the lowest operating frequency that is compatible with the data rate. Chawla teaches an implementation of the ReSerVation Protocol (RSVP) that enables dynamic modification of a link's operating frequency in response to RSVP requests from network hosts. According to Chawla, an application such as a video application may, from time to time, determine that a network connection over which the video application is receiving data requires more bandwidth. Chawla teaches that the video application may then issue an RSVP request for more bandwidth. Chawla indicates that its novelty lies in its ability to alter the operating frequency without suspending data transmission.

There is nothing in Chawla that teaches either explicitly or inherently a system that periodically compares the amount of data traversing a link against the link's bandwidth to conserve energy by making sure that the link operating frequency is maintained at the lowest possible acceptable value. To the contrary, Chawla describes a system in which a link's operating frequency would never change unless requested to do so by one of the hosts. Whereas the claimed invention would reduce the operating frequency of a network link in the face of significant and persistent underutilization of the link, Chawla could remain in a static state of significant underutilization unless and until another host requests some of the underutilized bandwidth. Chawla is not concerned with periodically checking bandwidth utilization in the absence of RSVP requests because Chawla is not concerned with reducing power consumption. As an invention directed primarily at assuring the Quality of Service (QoS) commitments are fulfilled in a heterogeneous network environment, Chawla does not teach either explicitly or inherently automatically and periodically reducing the operating frequency of a network link

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because underutilized network connections do not present a problem in terms of fulfilling QoS agreements and the like.

The limitations added to amended claim 1 are analogous to the limitations of previously presented claim 3. The Examiner rejected claim 3 as previously presented as being anticipated by Chawla and cited column 13 lines 20-27 as disclosing the specified interval limitation of claim 3. The cited portion of Chawla reads as follows:

If a video client application (not shown) executing on recipient host 210-A3 senses that more network bandwidth is required (such as 120 Kbps) to effectively receive the "A" video data stream 203, the host 210-A3 can use RSVP to make a bandwidth reservation request (not shown) containing bandwidth allocation adjustment information to each network device 201-E, 201-D, 201-C and 201-B. The bandwidth allocation adjustment information in the bandwidth reservation request specifies a request for 120 Kbps of bandwidth to be reserved for the "A" video data stream 203.

There is nothing in this passage explicitly or inherently requiring Chawla's video client application to monitor the effective data rate at specified intervals. The primary characteristic of a limitation that occurs periodically is that it occurs at specified intervals. This subtle element is not found in the reference because the reference is an asynchronous, message driven protocol in which hosts and servers adjust themselves only when needed in response to performance problems.

Thus, the cited reference does not teach either explicitly or inherently all of the limitations of the amended claim. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the anticipation rejection of independent claim 1 and its dependent claims.

With respect to the anticipation rejection of independent claims 7, 15, and 21, Applicant has amended each of the claims to include a limitation substantially similar to the amendment made to claim 1. For reasons analogous to the reasons presented with respect to claim 1, Applicant requests the Examiner to reconsider and withdraw the rejections of pending independent claims 7, 15, and 21.

### CONCLUSION

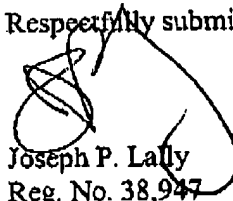
In the present response, Applicant has addressed the objection to the claims, and responded to the Examiner's claim rejections under 35 USC § 112, second paragraph, § 102(e),

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and § 103(a). Accordingly, Applicant believes that this response constitutes a complete response to each of the issues raised in the office action. In light of the amendments made herein and the accompanying remarks, Applicant believes that the pending claims are in condition for allowance. Accordingly, Applicant would request the Examiner to withdraw the rejections, allow the pending claims, and advance the application to issue. If the Examiner has any questions, comments, or suggestions, the undersigned attorney would welcome and encourage a telephone conference at 512.428.9872.

Respectfully submitted,



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